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November 29, 2021

U.S. Department of Transportation, Docket Operations
West Building Ground Floor, Room W12-140
1200 New Jersey Avenue, SE
Washington, DC 20590

Re: Summary Grant Petition for an Exemption to Conduct Unmanned Aircraft Systems (UAS) Operations Allowed by Special authority for certain unmanned aircraft systems. Title 49 U.S.C. § 44807, and 14 C.F.R. Part 11 to Authorize Commercial Agricultural- Related Services with UAS Weighing 55 Pounds or More

A. SUMMARY:

On behalf of our client, Allen Chase Enterprise, Inc. an agricultural services company and pursuant to Title 49 U.S.C. § 44807, Special authority for certain unmanned aircraft systems and 14 C.F.R. Part 11, Allen Chase Enterprise hereby respectfully requests expedited approval and necessary exemptions from the following listed Code of Federal Regulations ("CFR") for the purpose of operating the DJI AGRAS T-30 AND HSE-UAV M6A PRO G200 unmanned aircraft systems ("UAS") weighing over 55 pounds but no more than 142 lbs. maximum spray weight and 172 lbs. maximum spreading weight for the T-30 and no more than 88.3 pounds, for the M6A Pro G200, for various agricultural operations and noxious weed and vegetation control throughout the United States. The operations will be conducted within and under the conditions outlined herein, or as may be established by the FAA, as required by Title 49 U.S.C. § 44807. Although the petitioner is requesting the operation of each of these aircraft, they will not be conducting multiple aircraft operations at this time.

The proposed operation in this Petition for Exemption is similar in nature to that currently conducted by DroneXum, Exemption No. 18413A, except the aircraft in the current petition is the DJI Agras T-30 and HSE-UAV M6A Pro G200, both have been approved in previous exemptions, and is therefore considered a summary grant for the aircraft and the

requested relief from Condition and Limitation 27c requested under paragraph P.

As described more fully below in this particular petition, the requested exemption would permit the operation of the DJI AGRAS T-30 AND HSE-UAV M6A PRO G200 by petitioner, under controlled conditions in predetermined airspace that is, 1) Limited in scope 2) Controlled as to access by mission essential personnel only. Grant of the requested exemption is based upon the concise direction expressed within Title 49 U.S.C. § 44807; the added authority granted by the Act, as amended; an equivalent level of safety regarding flight operations as expressed herein, and significant cost savings achieved by transitioning from traditional manned aerial resources to UASs. The petitioner respectfully requests that the FAA grant the requested exemption without delay. Petitioner will operate the DJI AGRAS T-30 AND HSE-UAV M6A PRO G200 while keeping the documents required by the regulations at the ground control station and immediately accessible to the Pilot in Command (PIC) and by modification of the required markings (registration number) of the UAS to be displayed on the fuselage.

The name and address of the Petitioner is:

Allen Chase Enterprise, LLC

The primary contact for this petition, with a copy to me at the address above is:

Allen Chase
24 County Route 1A
Oswego NY 13126

In support of this Petition for Exemption, Allen Chase Enterprise will submit the following associated UAS operating documents:

- Allen Chase Enterprise Pilot and Aircrew Training Program
- Allen Chase Enterprise Flight Operations and Procedures Manual
- Allen Chase Enterprise Operational Risk and Safety Manual
- Allen Chase Enterprise SRM document requesting relief from condition and limitation 27C.
- DJI Agras T-30 Quick Start Guide
- DJI AGRAS T-30 Operating Manual
- DJI AGRAS T-30 Intelligent Battery Station Manual
- DJI AGRAS T-30 Entrustment Inspection and Testing Report, Translated
- DJI AGRAS T-30 TCB grant of Equipment Authorization National Information Infrastructure
- DJI AGRAS T-30 TCB grant of Equipment Authorization Digital Transmission System
- DJI Agras Additional Information
- DJI Email supplement confirming sprayer performance
- M6A Pro G200 Test Report
- M6A Pro G200 Specifications
- Specifications of Flight Controller: TITU-10
- M6A Pro G200 Flight Manual
-

All of these documents will be submitted on a confidential basis under separate cover, pursuant to 14 C.F.R. § 11.35(b), as the documents contain confidential commercial and proprietary information that Allen Chase Enterprise has not and will not share with others. The information contained in this material is not generally available to the public and is

protected from release under the Freedom of Information Act, 5 U.S.C. § 552 *et seq*.

B. BACKGROUND OF PETITIONER AND MANUFACTURER

Allen Chase Enterprise, Inc. is a diversified provider of agricultural services. Allen Chase Enterprise will be utilizing the DJI AGRAS T-30 AND HSE-UAV M6A PRO G200. for the spray application of liquid herbicides, fungicides, and pesticides on agricultural crops. Allen Chase Enterprise will also be using the T-30 and the M6A Pro G200 for the application of granular products such as fertilizer, lime, and seed in each of these areas and on each crop.

Allen Chase Enterprise is utilizing their experience in agriculture to expand into missions well suited for UAS/drones to reduce risk and improve efficiencies and value added. For all operations the T-30 and M6A PRO G200 will have a maximum flight height of 100'. This allows for clearance of obstacles such as trees, buildings, power lines etc. Having said that, the primary flight height during operation will be 10' feet above the canopy of the crop being sprayed. (typically 18-25 feet elevation from the ground) Allen Chase Enterprise plans to provide a wide array of services in agricultural markets where UAS/drones fit the mission better and safer than manned aircraft. The major benefits to the general public are 1) reduction in injury to ground based applicators in challenging terrain, 2) reduced exposure to chemicals for applicators, 3) reduction in chemical drift compared to manned aircraft application, 4) reduced risk to flight crew compared to manned aircraft, 5) reduced exposure of surrounding beneficial vegetation, 6) more environmentally friendly application with reduced noise, 7) selective use of chemicals for a safer more targeted application, and 8) better value for the customer.

The UAS for the purposes of this petition is the DJI AGRAS T-30 AND HSE-UAV M6A PRO G200.

Beijing TT Aviation Technology Co., Ltd. ("TTA") was established in 2008 in Beijing and commissioned by the government and enterprises and institutions engaged in unmanned product development, system integration and services of private enterprises. These TTA UAS platforms have over ten years of industry application experience in China and the Chinese Society of Agricultural Engineering plant protection and pesticide application technology, leading the company's main international multi-rotor UAV, fixed-wing UAV and manned aircraft, and other aviation rotorcraft research and development, sales, leasing and services. The company maintains ISO9001 Quality System and 14001 Environmental Management System certifications and is the key laboratory for Beijing University of Aeronautics and Astronautics. They are the first and largest AOPA 'CAAC' certified Training Facility in China as well as the largest AOPA Testing Facility in North China.

The M6A Pro G200 has logged more than 4,150 hours of testing since its inception by the TTA. Additional testing has been performed by the National Plant Protection Machinery Quality Supervision and Inspection Center. There are currently 450 units that have been sold in China and 27 sold globally.

DJI also has an unparalleled presence in the UAS market with steadfast commitment to R&D, a culture of constant innovation and curiosity, and a focus on transforming complex technology into easy-to-use devices. Building on the ethos of "form follows function," DJI products combine advanced technology with dynamic designs.

Established to produce DJI's innovative products safely and responsibly, the wholly owned subsidiary Shenzhen Dajiang Baiwang Technology Co., Ltd. is a high-tech

manufacturing facility specializing in unmanned aerial vehicles.

In 2016, Dajiang Baiwang passed the ISO 9001:2015 Quality Management System Certification and in 2017 passed the SGS ISO 14001:2015 Environmental Management System Certification.

DJI's offices can now be found in the United States, Germany, the Netherlands, Japan, South Korea, Beijing, Shanghai, and Hong Kong. As a privately owned and operated company, DJI focuses on its vision, supporting creative, commercial, and nonprofit applications of their technology.

Today, DJI products are redefining industries. Professionals in filmmaking, agriculture, conservation, search and rescue, energy infrastructure, and more customers trust DJI to bring new perspectives to their work and help them accomplish feats safer, faster, and with greater efficiency than ever before.

Sales of the DJI Agras T-30 and HSE-UAV M6A Pro G200 have occurred in China, Southest Asia, and Korea for over six months with a combined total of 1,200,000 hours flown and 20,600.000 flights without any recorded incidents.

C. SYSTEM BENEFITS AND PUBLIC INTEREST

1. Allen Chase Enterprise intent along with a complete range of agricultural vegetation and noxious weed control and management services, utilizing the DJI T-30 and the HSE-UAV M6A Pro G200 systems optimized principally for spray applications.

   Their processes protect crops from biological organisms, including weeds, pathogens, and arthropods, that interferes with the production of crops affecting quality and/or yield, which can impact consumers through higher crop prices. Spraying herbicides benefits agricultural ecology and increases the efficiency of harvesting operations. Further the selective use of chemicals for a safer more targeted application for utility weed control reduces the negative impact of excess pesticide application and residual chemicals being left in the soil or running off into streams or the water table.

2. Applications by manned helicopters for agriculture carries significant risks of fatality.[1] This was such a concern that in 2014 the National Transportation and Safety Board commissioned a report to understand root causes. The enhanced safety achieved using an unmanned aircraft with the specifications described in this petition, as opposed to the much larger, manned aircraft carrying fuel and crew or passengers, is safer and exposes workers and other people on the ground to significantly less risk. Additionally, Allen Chase Enterprise UA use batteries which are not as flammable and explosive as 100LL or Jet A fuel. If there was an emergency where the UA crashed, there is a significantly lower chance of individuals being injured from an explosion or fire.

3. According to a USDA Economic Research Service Report, of the United States' 408

[1] See e.g., NTSB Special Investigative Report on the Safety of Agricultural Aircraft Operations, NTSB/SIR-14/01 (Adopted May 7, 2014):
"78 accidents [and 10 fatalities] occurred during calendar year 2013 and involved some aspect of agricultural (ag) operations, pilot training, or other crop protection activities. The report identifies the following recurring safety issues: lack of ag operations-specific fatigue management guidance, lack of ag operations-specific risk management guidance, inadequate aircraft maintenance, and lack of guidance for pilot knowledge and skills tests."

million acres of cropland, about 70% (286 million acres) is commercially treated with crop protection products. Out of that, the agricultural aviation industry treats 71 million acres of cropland aerially each year. By utilizing UAS, this vital portion of our nation's food supply can be treated in a more environmentally safe way, thus protecting our streams from excessive chemical run off, algae blooms, etc.

4. A large portion of the agricultural land is currently sprayed by crews on foot, carrying heavy loads on steep, dangerous terrain. Allen Chase Enterprise will replace this method using its aircraft. It is in the interest of safety to reduce worker exposure to this difficult and dangerous environment.
5. Manned aircraft availability and scheduling are becoming increasingly difficult and costly for Allen Chase Enterprise customers. On average, each manned aerial application business has 2.1 aircraft, ranging in price from $100,000 to $1,400,000 depending on hopper size, engine type and engine size. Pilot shortages, aircraft shortages, and driver shortages are increasing. Smaller owners and non-governmental organizations without several hundred thousand acres are finding it difficult to obtain economical services with these figures. Allen Chase Enterprise can increase service providers at a lower cost and alleviate pilot and service shortages for small landowners.
6. Manned airplanes and helicopters produce significant noise pollution that disrupt the public's ability to enjoy both private and public property. UAS are much quieter and will not disrupt the public as much as manned aircraft; thus, the benefit will be recognized as a reduction in noise pollution.
7. Pesticides being sprayed from high elevations can be picked up by the wind and carried for miles. By flying at a lower altitude (6-12 m), and by never leaving the customer's site, there is a significantly reduced chance of pesticides ("driftable fines") being accidentally sprayed in the wrong area. With manned aircraft and helicopters, this can happen in a number of ways: Pilot error or map misinterpretation en route to the site, pesticides being picked up by the wind and blown onto neighboring property affecting commercial cropland and residential areas, and equipment malfunction.

D. DJI Agras T-30 Specifications

The AGRAS T-30 has an improved overall structure with modular design and supports the highest payload and widest spray width ever in a DJI agricultural drone. With powerful hardware, an AI engine, and 3D-operation planning, the T-30 brings operation efficiency to a whole new level.

Enhanced safety features, inspections, testing data and specifications of the T-30 are included in the attached proprietary documents.

E. Standard Components and Safety Systems

The T-30 has an aerial-electronics system with a multiple redundancy design, and also has onboard D-RTK antennas, supporting dual-antenna technology that provides strong resistance against magnetic interference to ensure flight safety. Thanks to the dedicated DJI industrial flight control system, the T-30 offers four operation modes: Route, A-B Route, Manual, and Manual Plus. DJI MG2 automatically produces flight routes based on your planned fields. To start, simply select the field from the field list. Plan a field by walking with the remote controller, an RTK handheld mapping device, or by

flying the aircraft to waypoints, according to the application scenarios.

In A-B Route operation mode, the aircraft travels along a planned route and sprays its liquid payload. Users can set the line spacing, flying speed, and other parameters.

In Manual operation mode, users can start and stop spraying manually, and also adjust the spray rate.

In Manual Plus operation mode, the flight speed is restricted, and the heading is locked. Except for the heading, users can control the movement of the aircraft via the control sticks.

Press button C1 or C2 on the remote controller or the corresponding button in the app and the aircraft will fly one line spacing to the left or right. Note that this is the default function for button C1 and button C2. They are customizable in the app.

The T-30 also includes the Operation Resumption function. When pausing the operation in Route or A B Route operation mode, Operation Resumption records a breakpoint for the aircraft. Users can resume from the breakpoint when continuing the operation.

The remote controller features Multi-Aircraft Control mode, which can be used to coordinate the operation of up to five aircraft simultaneously. Turn the aircraft control switch dial on the remote controller to switch control between different aircraft.

The DBF imaging radar works automatically in Route, A-B Route, and Manual Plus operation modes during both day and night, without being affected by light or dust.

Altitude detection and stabilization functions are available in forward, backward, and downward directions while Obstacle Avoidance is available in forward or backward direction according to the direction of flight.

The radar module can detect the angle of a slope and automatically adjust to maintain the same distance with the surface even in mountainous terrain. In Route and A-B Route operation modes, the radar can effectively sense obstacles and plan a flight route to actively circumvent obstacles. Note that this is disabled by default. Users can enable it in the app.

The upgraded spraying system includes eight sprinklers placed on both sides of the aircraft to provide evenly distributed spraying and coverage of the liquid payload, and an all-new electromagnetic flow meter for higher precision and stability than conventional flow meters.

The T-30 uses a dedicated DJI industrial flight controller to provide multiple operation modes for various applications. The DBF imaging radar provides terrain following to guide the aircraft to maintain a constant distance above crops in specific operation modes and is capable to actively circumvent obstacles through Auto Bypass. Functions such as operation resumption, system data protection, empty tank warning, low battery level warning, and RTH are also available.

F. Flight Modes

P-mode (Positioning): The aircraft utilizes GNSS or the RTK module for positioning. When the GNSS signal is strong, the aircraft uses GNSS for positioning. When the RTK module is enabled and the differential data transmission is strong, it provides centimeter-level positioning. The aircraft reverts to A-mode when the GNSS signal is weak. The aircraft will fly in P-mode by default.

A-mode (Attitude): GNSS is not used for positioning and the aircraft can only maintain altitude using the barometer. The aircraft enters A-mode only when there is weak GNSS signal or when the compass experiences interference. The flight speed in A-mode depends on its surroundings such as the wind speed. In A-mode, the aircraft cannot position itself and is easily affected by its surroundings, which may result in horizontal shifting. Use the remote controller to position the aircraft. Maneuvering the aircraft in A-mode can be difficult. Avoid flying in confined spaces or in areas where the GNSS signal is weak. Otherwise, the aircraft will enter A-mode, leading to potential flight risks. Land the aircraft in a safe place as soon as possible.

G. System Data Protection

In Route or Route A-B operation mode, the System Data Protection feature enables the aircraft to retain vital system data such as operation progress and breakpoints after the aircraft is powered off to replace a battery or refill the spray tank. Follow the instructions in Operation Resumption to resume the operation after restarting the aircraft.

During Route operations, in situations such as when the app crashes or the remote controller disconnects from the aircraft, the breakpoint will be recorded by the flight controller and can be recovered in the app once the aircraft is reconnected. Go to Operation View, select, then Advanced Settings, and tap Continue Unfinished Task. Recall the operation in Executing tag in operation list.

H. Obstacle Avoidance

Obstacle avoidance is used in the following two scenarios:

1. The aircraft begins to decelerate when it detects an obstacle is 15 m away and hovers in place when 2.5 m away from the obstacle. Users can not accelerate in the direction of the obstacle but can fly in a direction away from the obstacle.
2. The aircraft immediately brakes and hovers if it detects an obstacle nearby. Users cannot control the aircraft when it is braking.

When the aircraft is hovering, it is in Obstacle Avoidance mode. Users can fly in a direction away from the obstacle to exit Obstacle Avoidance mode and regain full control of the aircraft.

I. Return to Home (RTH)

There are two types of RTH: Smart RTH and Failsafe RTH.

Smart RTH

Press and hold the RTH button on the remote controller when GNSS is available to enable Smart RTH. Both Smart and Failsafe RTH use the same procedure. With Smart RTH, you may control the speed and altitude of the aircraft to avoid collisions when returning to the home point. The aircraft status indicators will show the current flight mode during RTH. Press the RTH button once or toggle the pause switch to exit Smart RTH and regain control of the aircraft.

Failsafe RTH

Failsafe RTH is automatically activated if the remote controller signal is lost for more than three seconds, provided that the home point has been successfully recorded, the GNSS signal is strong (the white GNSS icon), and the RTK module is able to measure the heading of the aircraft. The RTH continues if the remote controller signal is recovered, and users can control the aircraft using the remote controller.

Press the RTH button once or toggle the pause switch to cancel RTH and regain control of the aircraft.

There are two ways to set a home point:

1. Set the current coordinates of the aircraft as the home point.
2. Set the current coordinates of the remote controller as the home point.

Obstacle Avoidance During RTH

In an optimal operating environment, obstacle avoidance during RTH is available. If there is an obstacle Within 20 m of the aircraft, the aircraft decelerates and then stops and hovers. If the aircraft comes within 6 m of the obstacle while decelerating, the aircraft stops, flies backward to a distance of approximately 6m from the obstacle, and hovers. The aircraft exits the RTH procedure and waits for further commands.

Landing Protection Function

Landing Protection activates during auto landing.

J. Omnidirectional Digital Radar

The all-new Omnidirectional Digital Radar works during both day and night, without being affected by light or dust. In an optimal operating environment, the radar module can predict the distance between the aircraft and the vegetation or other surfaces in forward, rear, and downward directions to fly at a constant distance to ensure even spraying and terrain following capability. The DBF imaging radar can also detect obstacles 30 m away from the aircraft. The radar module adopts digital beam forming technology, which supports 3D point cloud imaging that effectively senses the environment and helps to circumvent obstacles in both Route and A-B Route operation modes. In addition, radar module limits the descent speed of the aircraft according to the distance between the aircraft and ground, to provide a smooth landing.

The altitude stabilization and obstacle avoidance functions of the radar module are enabled by default, and can be disabled in the app. When enabled, the aircraft flies above the vegetation at a constant spraying distance in Route, A-B Route, and Manual Plus operation modes. In Manual operation mode, the radar module can also measure the spraying distance above the vegetation or other surfaces, but the aircraft is not be able to fly at a constant spraying distance. The obstacle avoidance function can be used in any mode. Auto Bypass is disabled by default.

The obstacle detection range is 360 degrees in the horizontal direction and plus or minus 15 degrees in the vertical direction. The detection distance is 1.5 to 30m

K. Low Voltage and Battery Warnings

The aircraft features a low battery warning, critical low battery warning, and critical low voltage warning.

1. Low Battery Warning: The aircraft status indicators slowly blink red. Fly the aircraft to a safe area and land it as soon as possible, stop the motors, and replace the batteries.
2. Critical Battery Warning or Critical Voltage Warning (the battery voltage is lower than 47.6 V): the aircraft status indicators rapidly blink red. The aircraft begins to descend and land automatically.

L. Flight Limits and Geofencing Zones

For safety reasons, flight limits are enabled by default to help users operate this aircraft safely and legally. Users can set flight limits on height and distance.

When operating with a strong GNSS signal, the height and distance limits and GEO Zones work together to monitor flight. With a weak GNSS signal, only the height limit prevents the aircraft from going above 30 meters.

GEO Zones are divided into different categories. All GEO Zones are listed on the DJI official website at http://www.dji.com/flysafe.

Flight Recording of all flights: Flight data shows a real-time video of all operator control input, GPS statuses, vibrate, shake and motor balance statuses along with battery voltage and all other critical telemetry data allowing operator to fully track entire history. All flights are automatically saved on the GCS. This further adds to safety for operator and VO training as operator-caused issues can be quickly identified.

High Visibility LED Aviation Lighting: The AGRAS T-30 has Long-range visible, high intensity LED strobes.

M. HSE-UAV M6A Pro G200 Specifications

The aircraft is a multi-rotor UAS aircraft comprised of a VTOL UAS and a transportable Ground Control Station (GCS). It provides a wide array of essential agricultural spraying services, including watering, fertilizers, pesticides, and herbicides. It can also be equipped with sensors and equipment to detect and monitor agricultural areas that require irrigation, fertilization, or other treatments. It does not carry any flammable propellant or fuel.

The comprehensive list of specifications of the M6A Pro G200 is provided under separate cover accompanying this amendment. The full operational weight is 88.3 pounds.

M6A Pro G200

Flight Controller: TITU-10

Manufacturer: Beijing TT Aviation Technology Co., Ltd. ("TTA").

Utilization: Essential agricultural spraying services, including watering, fertilizers, pesticides, and herbicides.

Airframe Weight: 48.6 lbs. empty.

Tank Weight (full): 39.7 lbs.

All up weight: 88.3 lbs.

I. Standard Components and Safety Systems

TITU-10 Autopilot system - The HSE-UAV The M6A Pro G200 employs the TITU-10 flight controller with a live radar-based obstacle avoidance with live forward and rear facing Radar for obstacle avoidance. It is multi-rotor drone control system specifically for the fields of agriculture, surveying and mapping, security and power. The hardware system uses industrial-grade components and multiple redundant designs, including dual IMU, GPS+RTK, dual magnetometer, dual Barometer, etc., to ensure the safety of the hardware system. A list of the TITU features are included under separate cover accompanying this amendment.

Rotor Fail Protection - If one rotor fails, the flight controller will compensate for lost rotor and will notify operator via on-screen warnings; aircraft maintains stability allowing operator to safely land.

Return-to-launch (RTL) - The operator has systems that they can use to instantly stop the UA and return it to the base point at a predetermined safe height, respectively.

Geofencing and Obstacle avoidance - The UA's flight controller is given GPS coordinates of a boundary that it cannot leave, keeping the UA from leaving the pre-determined and defined operations area. When enabled, the UA can "hit" the perimeter, but not fly past or through it. Manual or automatic inputs commanding the UA to break the geofence are ignored. In the case where there is a road along the property line, or a place where a neighbor's property is located, the operator can use the Ground Station Google Maps interface and draw a line around the field. This is a perimeter that the drone will not fly outside of. If the operator were to try to fly beyond that boundary, the aircraft would approach the line and stop and hover.

Second, for an obstacle, other property, or people, and purposeful obstacle boundary can

be established. This means that the aircraft will build its flight plan and avoid that obstacle. Further, the operator can specify how large of a buffer they would like to keep between the aircraft and that obstacle.

As a reminder, if there was ever a time where a non-participant person or property entered the planned flight area, the operator could immediately halt the operation by activating the emergency “kill switch” to immediately stop the rotors or may press a switch to activate the emergency return to home feature.

RTK GPS - The UAS has a telemetry link to a base station which makes GPS corrections, giving the UA an accurate location reading with under 3 feet of precision. (Typically, 50cm). This ensures that the UA is flying the missions it is given and applying herbicides in a pattern much more efficiently and consistently than agricultural helicopters.[2]

Redundant GPS- All UAS are equipped with redundant GPS units. Should the primary GPS unit experience a failure, a second GPS unit will automatically takeover as a failsafe to ensure accurate positioning and navigation is maintained. Full dual redundancy. Automatic switching in real-time between compass, IMU, GPS or controller if one fails.

Telemetry - Should a telemetry link to the base station be lost, the UA has all mission parameters stored onboard, and can safely continue to execute a mission. If the RTK link is dropped, the positioning accuracy may drop to around 2m accuracy. Audio alerts on the RC remote and base station computer will alert the PIC, who may opt to allow the UA to continue its mission if it is safe to do so or interrupt the mission and bring the UA back under RC control.

RC control - All missions occur with pre-programmed commands providing instructions to the UA. At all times, a PIC has an RC remote with the ability to override the current mission. Should the RC connection be lost, the autopilot software will immediately end the mission and return the UA to the home launch location. In this case, the UA ascends to a height set by the PIC in advance of the mission and determined to be safe given the surrounding terrain, normally 30-40 feet. The UA then returns in a straight line to the launch location. The PIC may choose to resume or alter the mission if an RC link is established again while the UA returns home.

Emergency Kill Switch - An emergency "Kill Switch" allows the operator to instantly stop motors in the event of an emergency.

II. Additional Safety Functions

Additional supplemental safety information is provided below to strengthen the petitioner’s position that the proposed UASs can be operated safely in the NAS in accordance with Title 49 U.S.C. § 44807. The HSE-UAV M6A Pro G200 has an unprecedented safety rating with 0 reported injuries or fatalities during customer use and or testing.

Full Black Box / Flight Recording of all flights: Flight data shows a real-time video of all operator control input, GPS statuses, vibrate, shake and motor balance statuses along

[2] Based on experience with these types of operations, HSE-UAV would recommend an RTK GPS be operating with a positional accuracy under 2m as a requirement for operations of this type.

with battery voltage and all other critical telemetry data allowing operator to fully track entire history. All flights are automatically saved on the GCS and cached on the Flight Controller (in the unlikely event of a lost-link). This further adds to safety for operator and VO training as operator-caused issues can be quickly identified. Further, it allows for remote diagnostics and has a financial benefit not requiring aircraft and components to be unnecessarily shipped.

Safety parameters: altitude, distance from home, horizontal speed and vertical speed: defaults are set by HSE-UAV, and the customer can set these as well based on location and operating restrictions.

High Visibility LED Aviation Lighting: Long-range visible, high intensity LEDs.

Intelligent Assisted Launch and Landing: Aircraft uses GPS and IMU data to determine when the craft is fully on the ground, meaning the craft will not shut rotors off until firmly on the ground. Aircraft also uses IMU data to safely and smoothly handle “In Ground Effect” caused by the rotor downwash, which lessens stress and accident likelihood for operator.

Flight Stall Prevention: Flight controller prevents accidental 'throttle zero' motor stall while in the air. In an emergency, operator can switch instantly to 'manual' mode to activate rotor kill, providing complete system override by the pilot during an in-flight emergency.

Semi-Automatic Navigation: Allows operator to manually override aircraft speed and altitude instantly during automatic Ground Station controlled flights.

Auto-lock rotors: Automatically locks rotor from accidental turning after initial power connected and again five seconds after rotors stop. The customer can also require a password be entered on the GCS to prevent unauthorized flights.

Change of Flight Parameters: Ability to change parameters in real-time (during flight).

Flight Controller Modifications: Ability to program, calibrate, debug, and modify flight controller information without power to rotors: allows safe physical interaction with UA while performing maintenance and servicing.

Return to Home Features: In the event that the original “home” location is no longer safe to return to, the PIC can execute a command to immediately, and automatically land the aircraft at its current location.

IP Rated: The G200 has achieved the prestigious IP65 rating which protects the internal electronics and components. The rating states that the fuselage is totally dust tight; full protection against dust and other particulates, including a vacuum seal, tested against continuous airflow. Additionally, protected against low-pressure jets (6.3 mm) of directed water from any angle (limited ingress permitted with no harmful effects).

III. Operational Analysis and Flight Testing

The HSE-UAV M6A Pro G200 has onboard safety features to ensure the UAS can operate safely under both normal and contingency operating conditions. These features include automation to increase safety and reduce pilot workload. Some examples are the self-monitoring function (pre-takeoff diagnostics), a high-precision altitude control system, and redundant GPS flight control systems with geo-fencing and active obstacle avoidance. The lost-link safety default feature allows the HSE-UAV M6A Pro G200 to automatically hover and land in response to a lost-

link event. Safety features such as the GPS warning/indicator lights and speed indicator light provide critical system status information to the pilot. HSE has been manufacturing and tracking reliability of the HSE-UAV M6A Pro G200 and similar models since 2009. In support of the manufacturer's quality control program, the petitioner provided entrustment inspections from Beijing TT Aviation Technology Co.,Ltd., and the National Plant Protection Machinery Quality Supervision and Inspection Center,

The M6A Pro G200 also has also been tested in unfavorable weather conditions to include high winds and a variety of terrains and no failures have been reported

Aircraft performed well with no loss of communications, no issues with stability, or control and handling. Performance of all safety features work as designed.

N. REGULATORY BASIS FOR PETITION AND REGULATIONS FROM WHICH EXEMPTION IS SOUGHT

1. 49 U.S.C § 44807

The Special Authority for Certain Unmanned Systems (49 U.S.C. § 44807) grants the Secretary of Transportation the authority to use a risk-based approach to determine whether an airworthiness certificate is required for a drone to operate safely in the NAS. Under this authority, the Secretary may grant exemptions to the applicable operating rules, aircraft requirements, and pilot requirements for a specific operation on a case-by-case basis. The Special Authority for Certain Unmanned Systems (49 U.S.C. § 44807) grants UAS operators safe and legal entry into the NAS upon consideration of its size, weight, speed, operational capability, proximity to airports and populated areas, and operation within visual line of sight. The FAA further may find that the UAS does not require "airworthiness certification under section 44704 of title 49, United States Code."

2. 49 U.S.C. § 44701

The FAA is further authorized to grant exemptions from its safety regulations and minimum standards under 49 U.S.C. § 44701 ("Section 44701") "if the Administrator finds the exemption is in the public interest." Section 44701(f) (authorizing the grant of exemptions from safety regulations and minimum standards under Section 44701(a) and (b) and Sections 44702-44716). Under 49 U.S.C. § 44701(f), the "Administrator may grant an exemption from a requirement of a regulation prescribed under subsection (a) or (b) of this section or any of sections 44702-44716 of [Title 49] if the Administrator finds the exemption is in the public interest."

For the reasons addressed herein, this Petition qualifies for expedited approval of Petitioner's request for exemption under both 49 U.S.C § 44807 and 49 U.S.C § 44701.

Allen Chase Enterprise seeks exemption from the following interrelated provisions of 14 C.F.R. Parts 61, 91, and 137:

FAR	Description
§ 61.3 (a)(1)(i)	**Requirement for certificates, ratings, and authorizations.**
§ 91.7(a)	**Civil aircraft airworthiness.**

§ 91.119(c)	**Minimum safe altitudes: General.**
§ 91.121	**Altimeter settings.**
§ 91.151(b)	**Fuel requirements for flight in VFR conditions.**
§ 91.405(a)	**Maintenance required.**
§ 91.407(a)(1)	**Operation after maintenance, preventive maintenance, rebuilding, and inspections.**
§ 91.409(a)(1) and (2)	**Inspections.**
§ 91.417(a) and (b)	**Maintenance records.**

§ 137.19 (c), (d) and (e)(2)(ii)(iii) and (v)	**Certification requirements.**
§ 137.31	**Aircraft requirements.**
§ 137.33	**Carrying of certificate.**
§ 137.41(c)	**Personnel, Pilot in command.**
§ 137.42	**Fastening of safety belts and shoulder Harnesses**

Listed below are the specific Code of Federal Regulation ("CFR") sections from which an exemption is sought, the rationale for why an exemption is needed, and a brief summary of the operating procedures and safeguards, which are described more fully in the operating documents being submitted under separate cover, which will ensure that the proposed operations can be conducted at a level of safety that is at least equal to that provided by the rule from which exemption is sought. For ease of review, this section divides the FARs from which exemption is sought into four main categories: (1) FARs pertaining to the UAS; (2) FARs pertaining to UAS Operating Parameters, and; (3) FARs pertaining to Part 137 Operating Parameters.

I. FARs Pertaining to the Unmanned Aircraft System

§ 91.403(b) *Maintenance, preventative maintenance, or alterations*
§ 91.405(a) *Maintenance required*
§ 91.407(a)(1) *Operation after maintenance, preventive maintenance, rebuilding, or alteration*
§ 91.409(a)(1) and (2) *Inspections*
§ 91.417(a) and (b) *Maintenance records*

Allen Chase Enterprise seeks an exemption from the following maintenance and inspection related FARs: 91.405(a) *Maintenance required*, 91.407(a)(1) *Operation after maintenance, preventive maintenance, rebuilding, or alteration*, 91.409(a)(1) and (2) *Inspections*, and 91.417(a) and (b) *Maintenance records*. These regulations specify maintenance, inspection, and records standards in reference to FAR § 43.6. An exemption from these regulations is needed because Part 43 and these sections only apply to aircraft with an airworthiness certificate, which the UAS to be operated under this exemption will not have, and because compliance with these regulatory provisions in the context of UAS operations is not feasible.

An equivalent level of safety will be achieved because maintenance, inspections, and records handling will be performed in accordance with the manufacturer's manual, any required manufacturer safety or service bulletins. Moreover, the PIC will conduct a pre-flight inspection of the UAS and all associated equipment to account for all discrepancies and/or inoperable components. Maintenance will be performed and verified to address any conditions potentially affecting the safe operation of the UAS, and no flights will occur unless and until all flight critical components of the UAS have been found to be airworthy and in a condition for safe operation. A functional test flight will also be conducted in a controlled environment following the replacement of any flight critical components, and, as required by the operating documents, the PIC who conducts the functional test flight will make an entry in the UAS aircraft records of the flight. Functional flight tests will not involve the carriage of hazardous materials. In addition, the operator will be required to follow the UAS manufacturer's maintenance, overhaul, replacement, inspection, and life limit requirements for the UAS and its components. Along with the preflight checklists, Allen Chase Enterprise Pilot Training Program, and a routine maintenance program, Allen Chase Enterprise believes an equivalent level of safety is met, and that equipment at risk of failure can be safely identified before flights occur.

In the DroneXum Exemption, the FAA determined that the proposed UAS operations required exemption from FAR §§ 91.403(b), 91.405(a), 91.407(a)(1), 91.409(a)(1) and (2), and 91.417(a) and (b), and that the achievement of an adequate level of safety required certain conditions and limitations. Allen Chase Enterprise has proposed in this Petition a number of Limitations related to maintenance, inspections, and records which it believes provide a level of safety at least equivalent to that provided by FAR §§ 91.403(b), 91.405(a), 91.407(a)(1), 91.409(a)(1) and (2), and 91.417(a) and (b). For this reason, and consistent with the exemption granted from these sections in the DroneXum Exemption, Allen Chase Enterprise requests an exemption from these sections subject to the DroneXum limitations, without having to perform the inspections and maintenance items required by FAR §§ 91.403(b) 91.405(a), 91.407(a)(1), 91.409(a)(1) and (2), and 91.417(a) and (b).

II. FARs Pertaining to Unmanned Aircraft System Operating Parameters

§ 91.7(a) Civil aircraft airworthiness

Inasmuch as there will be no airworthiness certificate issued for the UAS, Allen Chase Enterprise seeks an exemption from FAR § 91.7(a) *Civil aircraft airworthiness*, which requires that a civil aircraft be in an airworthy condition to be operated. While the UAS operated by Allen Chase Enterprise will not have an airworthiness certificate, consistent with the FAA's determination in the DroneXum Exemption, the pilot may determine the UA is in an airworthy condition prior to flight. As described more fully in the operating documents, this is achieved through adherence to Allen Chase Enterprise routine pre-flight checklist regularly scheduled maintenance, and the enhanced pilot training requirements of the Allen Chase Enterprise Pilot Training Program.

§ 91.119(c) Minimum safe altitudes

Allen Chase Enterprise also seeks an exemption from FAR § 91.119(c) *Minimum safe altitudes*, to the extent necessary to allow UAS operations over *other than congested areas* at altitudes lower than those permitted by rule. The ability to operate at those altitudes is one of the key benefits of using UAS for the proposed agricultural activities. An equivalent or greater level of safety will be achieved given the size, relatively light weight, and slow speed

of the UAS, as well as the controlled location where the operations will occur.

Allen Chase Enterprise generally will try to maintain an operating altitude of between 10-25 feet AGL during its spraying operations. That altitude is only increased when exercising caution and issuing a return-to-launch command to the UAS, which causes the UAS to ascend to an altitude of 100 feet AGL before returning home. In the extremely remote and secure environment where Allen Chase Enterprise operations will occur, flying at a low altitude increases the aircraft's efficiency, without posing any increased risk to people or property. Even at these low altitudes, Allen Chase Enterprise UAS operations will be conducted at a level of safety equal to or greater than that achieved by a larger manned aircraft performing similar activities at the altitudes required by FAR § 91.119. Moreover, an equivalent or even higher level of safety can be provided instead by, as provided herein, operating so as to de-conflict with manned vehicles operating above 500 feet AGL, within the VLOS of the PIC with the assistance of multiple VOs so as to ensure the safety of and de-confliction with any persons or property in the air and on the ground, including Participating and non-Participating personnel as well as the other UAS.

§ 91.121 Altimeter settings

Allen Chase Enterprise also requests an exemption from FAR § 91.121 *Altimeter settings,* which requires a person operating an aircraft to maintain cruising altitude or flight level by reference to an altimeter that is set to the elevation of the departure airport or barometric pressure. In the DroneXum Exemption, the FAA stated that an equivalent level of safety to the requirements of FAR § 91.121 can be achieved in circumstances where the PIC uses an alternative means for measuring and reporting UA altitude, such as global positioning system (GPS). The UAS that Allen Chase Enterprise intends to use for performing the proposed operations will be equipped with GPS or other equipment for measuring and reporting UAS altitude, and the PIC will check the UA altitude reading prior to each takeoff, effectively zeroing the UA's altitude at that point. Consistent with previously granted exemptions, these requirements ensure that an equivalent level of safety will be achieved, and an exemption from the requirements of FAR § 91.121 is therefore appropriate.

§ 91.151(b), Fuel requirements for flight in VFR conditions

Finally, Allen Chase Enterprise seeks an exemption from FAR § 91.151(b) *Fuel requirements for flight in VFR conditions,* which would otherwise require a 20-minute fuel reserve to be maintained. The FAA has previously determined that a requirement prohibiting the PIC from beginning a UAS flight unless (considering wind and forecast weather conditions) there was enough available power for UAS to operate for the intended operational time and to operate after that with the reserve power recommended by the manufacturer which would ensure an equivalent level of safety to the fuel requirements of FAR § 91.151. Allen Chase Enterprise will adhere to the same reserve power requirement and an exemption from FAR § 91.151's fuel requirements for flight in VFR conditions is therefore appropriate.

III. FARs Pertaining to Part 137 Certification Requirements

Allen Chase Enterprise seeks an exemption from the following FARs in Part 137: §§ 137.19(c), (d) and (e)(2)(ii)(iii) and (v) *Certification requirements*, 137.31 *Aircraft requirements*, 137.33 *Carrying of certificate*, 137.41(c) *Personnel*, and 137.42 *Fastening of safety belts and shoulder harnesses*. An exemption from these FARs is necessary because the provisions are either not compatible with or are unnecessary in the context of the

proposed UAS operations.

§ 137.19(c) Certification requirements

In the previous exemption granted to Drone Xum, the FAA determined that relief from § 137.19(c) was necessary to permit persons holding a remote PIC certificate with small UAS rating to act as PIC for commercial agricultural aircraft operations when utilizing a small UAS to conduct the operations. The FAA found that a commercial or airline transport certificate that § 137.19(c) requires was not a reasonable requirement for the UAS agricultural operations proposed by DroneXum. The basis for the relief was that DroneXum's remote PICs would comply not only with the requirements of Part 107, sub part C, but also with the additional knowledge and applicable skill requirements in FAR § 137.19(e)(1) and (2)(i), (iv) and (vi). The relief was also based, in Part, on DroneXum's compliance with the training requirements in its operating documents.

The proposed operations are identical to that previously approved by the FAA in Exemption No 18413A. Consistent with the FAA's prior analysis, compliance with the requirements of Part 107, subpart C, the additional knowledge and applicable skill requirements in FAR § 137.19(e)(1) and (2)(i), (iv) and (vi), and compliance with the training requirements in Allen Chase Enterprise operating documents, will ensure that an equivalent level of safety will be achieved.

§ 137.19(d) Certification requirements
§ 137.31 Aircraft requirements

In Exemption No 18413A, the FAA granted DroneXum an exemption to §§ 137.19(d), *Certification requirements,* and 137.31(a), *Aircraft requirements.* Consistent with the FAA's prior analysis in Exemption No 18413A, while Allen Chase Enterprise UAS will not have an airworthiness certificate, Allen Chase Enterprise will be capable of ensuring that the UAS are in a condition for safe operation based upon a thorough pre-flight inspection and compliance with the operating documents. The UAS components have a proven operational history and contain design safety features such that operations conducted under the requirements of this exemption will not adversely impact safety.

§ 137.19(e)(2)(ii), (iii), and (v) Certification requirements

Allen Chase Enterprise seeks an exemption from the knowledge and skill test requirements in § 137.19(e)(2)(ii), (iii), and (v) *Certification requirements,* because those requirements are not compatible or applicable to Allen Chase Enterprise proposed UAS operations. Consistent with the FAA's prior analysis in Exemption No 18413A, Precision Aerial Solution's training and certification program described in the operating documents provides the remote PIC with the necessary skills to safely operate the UAS. For this reason, granting relief from a demonstration of the skills described in § 137.19(e)(2)(ii), (iii), and (v) will not adversely impact safety, and therefore relief is warranted. Allen Chase Enterprise pilots operating UAS under the exemption will still be required to demonstrate the skills listed at § 137.19(e)(2) as applicable, in accordance with the provisions of § 137.19(e), which requires such demonstration in order to obtain the agricultural aircraft operator certificate, unless otherwise exempted. Also, consistent with the FAA's finding in Exemption No 18413A, that relief from the associated knowledge and skill test requirements of § 137.41(c) is also warranted because of the relief provided to § 137.19(e)(2)(ii), (iii), and (v), Allen Chase Enterprise seeks an exemption from the interrelated knowledge and skill test requirements

of § 137.41(c).

§ 137.31(b) Aircraft requirements

§ 137.42 Fastening of safety belts and shoulder harnesses

Allen Chase Enterprise seeks an exemption from § 137.31(b) *Aircraft requirements,* and § 137.42 *Fastening of safety belts and shoulder harnesses,* which relate to the installation and use of a shoulder harness and safety belt on an aircraft. An exemption from these requirements is warranted because Allen Chase Enterprise UAS do not have an onboard pilot and these regulations are intended to ensure the safety of the onboard pilot during manned agricultural aircraft operations. For this reason, granting the requested relief from §§ 137.31(b) and 137.42 will not adversely impact safety.

§ 137.33(a) and (b) Carrying of certificate

Allen Chase Enterprise requests relief from § 137.33(a) *Carrying of certificate*, which requires that a facsimile of the agricultural aircraft operator certificate be carried on the aircraft. The FAA has previously determined that relief from §§ 91.9(b)(2) and 91.203(a) and (b) for the carriage of the aircraft flight manual and aircraft registration onboard the aircraft is not necessary. Consistent with the FAA's prior analysis, an exemption is warranted here provided that a facsimile of the agricultural aircraft operator certificate and all certificates of registration are kept in a location accessible to the remote PIC.

Finally, given that Allen Chase Enterprise UAS will not have an airworthiness certificate, relief from § 137.33(b) *Carrying of certificate,* which requires the airworthiness certificate (if not carried in the aircraft) be kept available for inspection at the base of dispensing operation is conducted, is necessary. Allen Chase Enterprise will keep registration certificates available for inspection.

Allen Chase Enterprise has attempted to identify the appropriate C.F.R.s from which an exemption is needed in order to conduct the proposed operations in this Petition for Exemption. To the extent that the FAA determines that Allen Chase Enterprise needs an exemption from other C.F.R.s which are not addressed or explicitly named in order to conduct the proposed operations, Allen Chase Enterprise also seeks an exemption from those FARs for the reasons outlined above.

O. PILOT CERTIFICATION

§ 61.3 (a)(1)(i) Requirement for certificates, ratings, and authorizations.

No person may serve as a required pilot flight crew member of a civil aircraft of the United States unless that person:

(1) has in the person's physical possession or readily accessible in the aircraft when exercising the privileges of that pilot certificate or authorization –

(i) a pilot certificate issued under this part.

The petitioner will conduct the proposed operations under 14 CFR part 91, rather than under part 107. In general, part 91 is predicated on the presumption that the pilot in command conducting an operation under part 91 holds an airman certificate under part 61. As a result, the FAA has determined granting exemption from the requirement of § 61.3(a)(1)(i) to require a person holding a remote pilot in command certificate (with the appropriate training and demonstration of knowledge and skills required by this exemption) to conduct the operations

to which this exemption applies will ensure clarity.

The statutory obligation for an airman certificate is codified at 49 U.S.C. § 44711(a)(2). Pilots who conduct operations under this exemption with a remote pilot in command certificate would comply with § 44711(a)(2), as the FAA described in the Operation and Certification of Small Unmanned Aircraft Systems final rule (81 FR 42064, 42088-89 (June 28, 2016). The general requirements for all airmen include: eligibility, aeronautical knowledge and Transportation Security Administration (TSA) vetting. Given that the operation would occur only after airmen who hold a current remote pilot in command certificate have received specific training, have visited the area of operation and are fully capable of using the tools available to prepare for the operation, conduct comprehensive preflight actions, and conduct the operation only in a limited geographical area, the FAA has previously determined that a remote pilot certificate issued under 14 CFR part 107 provides the FAA sufficient assurance of the pilots' qualifications and abilities to perform the duties related to the operations authorized under this exemption. The remote pilot in command certificate confirms the petitioner's eligibility, secures TSA vetting, and ensures the PIC has the requisite aeronautical knowledge for operating the UAS within the NAS.

Remote pilots conducting operations under part 107 must complete a detailed aeronautical knowledge test, unless they already hold a certificate under 14 CFR part 61 and meet the flight review requirements specified in § 61.56.9 As a result, all such pilots will have the requisite aeronautical knowledge that is a key component of safe completion of all operations that will occur under this exemption. In this regard, the FAA addressed the applicable parts of § 61.125, Aeronautical knowledge, in the remote pilot in command certificate requirements.

For the reasons discussed below, this same rationale espoused by the FAA in previous approved exemptions, combined with Allen Chase Enterprise proposed safety mitigations, also supports a finding that the proposed operations under the requested exemptions can be conducted without adversely affecting safety.

While it is true that operations involving UAS weighing 55 pounds or more could raise additional safety concerns than operations involving small UAS, the unique nature of the proposed operations, including the low-risk rural environments in which the operations will occur, will ensure that safety is not jeopardized. While Part 107 will not apply to the proposed operations, wherever possible, Allen Chase Enterprise intends to conduct the proposed operations in accordance with Part 107. Moreover, all UAS operations that meet the definition of an "agricultural aircraft operation" will be conducted in accordance with those portions of Part 137 from which Allen Chase Enterprise is not exempted. In addition to compliance with Part 107 and the applicable sections of Part 137, Allen Chase Enterprise proposed operations include the following mitigations, however, a full SRM regarding certain elements of the operation is also included:

- Prior to any flight operation, Allen Chase Enterprise will visit the area of planned operation and inspect the terrain and vantage points. Allen Chase Enterprise utilizes a number of tools available to capture this environmental data, including high-resolution LiDAR, photogrammetry, and handheld surveying tools. The result is a geo-rectified model of the unit, with GPS points accurately marking the boundaries of the geofenced flight operating area.

- Following that, all state and local paperwork associated with the operation will be filed before and after operations. Allen Chase Enterprise will comply with all state laws regarding the application of pesticides. These include state and local agency notification, mapping, and specified safety procedures.
- The PIC will hold a Part 107 remote pilot airman certificate and be at least 18 years of age.
- Prior to beginning operations, the PIC will take all preflight actions as set forth in its flight manual, which includes a comprehensive preflight checklist.
- At least one visual observer (VO) will be used for each aircraft during all operations. Both the PIC and VO will maintain a safe distance from the UAS when it is operating as set forth in its flight manual.
- Flights will be limited to a maximum altitude of no more than 200 feet above ground level (AGL) and will normally be flown at average altitudes of 10 to 50 feet AGL or less over private fields and other agricultural areas.
- The areas to be flown are remote agricultural sites or other uninhabited agricultural sites which makes for excellent VLOS conditions.
- All operations will occur in a closed-access environment.
- All personnel at the site will be controlled by Allen Chase Enterprise at the time of flying. The T-30 and the M6A G200 shall operate from on-site takeoff/landing locations directly next to the PIC and co-located VO. The PIC and the VO will be able to verbally communicate during all operations or will utilize hand-held radios on site. In addition, signage announcing future spraying operations will be posted at the site entrance warning any customer employees or non-Participants that an aerial spraying operation is occurring. This is an industry standard process.
- The maximum flight time for each UAS flight will be a maximum of 40 minutes, with most agricultural flights lasting approximately 10-20 minutes.

I. Allen Chase Enterprise's Enhanced Pilot Training and Experience Standards

Through its robust training program, which requires aeronautical knowledge, experience, and flight proficiency beyond that required by Part 107, Allen Chase Enterprise will be able to achieve a level of safety equivalent to what would be obtained using a PIC holding a manned pilot certificate under Part 61.

Allen Chase Enterprise has integrated safety elements into the operation of its UAS, including comprehensive pilot and VO training and certification requirements that establish an equivalent level of safety to operations conducted with a PIC that holds a manned pilot certificate. These requirements include: a comprehensive UAS training course, which includes theory and practical components, a pilot theory exam, supervised flight training, including agricultural spraying, completion of Allen Chase Enterprise training and examination program requirements, minimum flight time requirements, demonstrated practical flying ability for the relevant tasks, and continued periodic training after certification.

Aeronautical Knowledge

The following chart addresses each aeronautical knowledge requirement of § 61.125

and explains whether it is relevant to, different from, or addressed by Part 107 operations or Allen Chase Enterprise internal procedures.

§ 61.125, Aeronautical Knowledge	**Allen Chase Enterprise Operations Under Part 107**
(1) Applicable Federal Aviation Regulations of this chapter that relate to commercial pilot privileges, limitations, and flight operations;	Addressed by Part 107
(2) Accident Reporting	Addressed by Part 107
(3) Basic aerodynamics and the principles of flight	Topics applicable to unmanned aircraft are included in Part 107.
(4) Meteorology	Applicable meteorology principles are covered by Part 107.
(5) Safe and Efficient Operation of Aircraft	Covered by Part 107 and included in Allen Chase Enterprise training. Topics applicable to unmanned aircraft are included in Part 107.
(6) Weight and Balance	"Loading and Performance" is addressed by art 107. Allen Chase Enterprise will comply with the weight limitations of Part 107 and will ensure that external loads do not negatively impact flight characteristics, as required by Part 107.
(7) Performance Charts	Not directly applicable.
(8) Effects of exceeding aircraft performance limitations	"Loading and Performance" is addressed by art 107. Allen Chase Enterprise will comply with the weight limitations of Part 107 and will ensure that external loads do not negatively impact flight characteristics, as required by Part 107.
(9) Pilotage and dead reckoning	Not applicable.
(10) Use of air navigation facilities	Topics applicable to unmanned aircraft are included in Part 107.
(11) Decision making and judgment	Covered by Part 10.7
(12) Principles and functions aircraft systems	Covered by Part 107 and by Allen Chase Enterprise internal procedures and use of operations manuals.
(13) Emergency operations	Covered by Part 107.
(14) Night and high altitude	Not applicable.
(15) Operating within the national airspace system	Covered by Part 107.
(16) Lighter than air ratings	Not Applicable.

Flight Proficiency

FAR § 61.127 contains flight proficiency requirements for specified aircraft categories. Part 107 contains no flight proficiency requirements, however, to ensure adequate flight proficiency, Allen Chase Enterprise will require demonstrated multi-rotor proficiency in:

- Preflight preparation;
- Preflight procedures;
- Airport and heliport operations;
- Hovering maneuvers;
- Takeoffs, landings, and go-arounds;
- Performance maneuvers;
- Navigation;
- Emergency operations;
- Special operations; and
- Postflight procedures.

Aeronautical Experience

FAR § 61.129 contains requirements for aeronautical experience that are not required for operations conducted under Part 107. To ensure an adequate level of aeronautical experience, Allen Chase Enterprise will require its pilots to obtain an appropriate level of aeronautical experience, using § 61.129 as a guide, where applicable and reasonable. Many of the requirements § 61.129, however, are either inapplicable or excessive for Allen Chase Enterprise proposed operations. Commercial helicopter ratings require at least 150 hours of flight time. Much of this, however, need not be in a helicopter or as the PIC. Other flight time requirements in Part 61 are cross-country time or instrument time. There is no need for Part 107 remote pilots to obtain time spent in cross-country flight or instrument flight. Allen Chase Enterprise pilots will spend all of their time flying the make and model of multi-rotor aircraft that will be used in their operations. These aircraft are far less complicated than manned aircraft. The pilots can, therefore, achieve a comparable level of experience and safety by requiring at least 10 hours of total flight time of a multi-rotor system as the PIC. This will be required by the operations manual and training program.

P. Relief from condition and limitation 27c

This relief is also now considered a summary grant as there have been previous approvals to petitions seeking the same. See FAA Exemption No. 18852 and FAA Exemption No. 18413A.

Condition and Limitation Number 27c states that:

27. All flight operations must be conducted at least 500 feet from all persons who are not directly participating in the operation, and from vessels, vehicles, and structures, unless when operating:

c. Near vessels vehicles and structures. Prior to conducting operations, the operator must obtain permission from a person with the legal authority over any vessels, vehicles or structures that will be within 500 feet of the UA during operations. The PIC must make a safety assessment of the risk of operating closer to those objects and determine that it does not present an undue hazard.

To expedite the FAA's safety assessment of the proposed relief sought, Allen Chase Enterprise has included a robust SRM

Q. FEDERAL REGISTER SUMMARY

Pursuant to Title 49 U.S.C. § 44807, Special authority for certain unmanned aircraft systems and 14 C.F.R. Part 11, 49 U.S.C. § 44701(f), and 14 C.F.R. Part 11, the following summary is provided for publication in the FEDERAL REGISTER, should it be determined that publication is needed:

Petitioner seeks an exemption from the following rules in Title 14 of the Code of Federal Regulations:

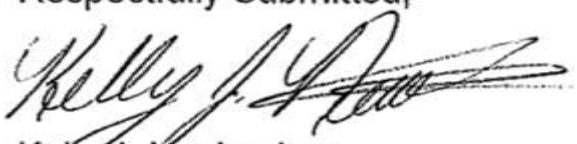
61.3 (a)(1)(i), 91.7(a), 91.119(c), 91.121, 91.151(b), 91.405(a), 91.407(a)(1), 91.409(a)(1) and (2), 91.417(a) and (b), 137.19 (c), (d) and (e)(2)(ii)(iii) and (v), 137.31, 137.33, 137.41(c), 137.42.

Allen Chase Enterprise requests an exemption for the purpose of operating the DJI AGRAS T-30 AND HSE-UAV M6A PRO G200 unmanned aircraft systems ("UAS") weighing over 55 pounds but no more than 142 lbs. maximum spray weight and 172 lbs. maximum spreading weight for the T-30 and no more than 88.3 pounds, for the M6A Pro G200, to provide commercial agricultural-related services in the United States.

R. CONCLUSION

For the foregoing reasons, Allen Chase Enterprise respectfully requests that the FAA grant this Summary Grant Petition for Exemption. Should you have any questions, or if you need additional information to support Allen Chase Enterprise Petition, please do not hesitate to contact the undersigned.

Respectfully Submitted,



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